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Laboratory Manual Experiments to illustrate the Elementary Principles of Chemistry. W. W. HILLYER. New York and London, The Macmillan Company. 1899. Pp. 198.

A Short History of the Progress of Scientific Chemistry in Our Own Times. WILLIAM A. TILDEN. Longmans, Green & Co. 1899. Pp. x + 276.

SCIENTIFIC JOURNALS AND ARTICLES.

American Chemical Journal, July, 1899: 'Camphoric Acid,' by W. A. Noyes; 'Contributions to our Knowledge of Aqueous Solutions of Double Salts,' by H. C. Jones and K. Ota. This is a continuation of the investigation of the double sulphates. The evidence, in the case of the double chlorides, seems even stronger in favor of the hypothesis which has been so strongly emphasized by Remsen, that double salts are true compounds, as this work shows that molecules of double salts exist as such in concentrated solution. 'On Undecylamine and Penta-decylamine and the Preparation of the Higher Amines of the Aliphatic Series,' by Elizabeth Jeffreys; 'An Electric Drying Oven,' by T. W. Richards. The general devices that can be used to secure the desired results in a drying oven are shown when the source of heat is due to electrical resistance. 'On Certain Derivations of Symmetrical Trichlorbenzol,' by C. L. Jackson and F. H. Gazzolo; 'Narcotine and Narceine,' by G. B. Frankforter and F. H. Keller; 'The Reaction between Aliphatic Sulphocyanates and Metallic Derivatives of Acetoacetic ester and Analogous Substances,' by E. P. Kohler; 'A Method for Carrying out Chemical Reactions under High Pressures,' by B. H. Hite. The author gives full details for the apparatus necessary for such work.

J. ELLIOTT GILPIN.

THE *Mois Scientifique et Industrielle* is the title of a new monthly journal which has begun publication in Paris. Each number contains an original article and a digest of physical and chemical literature. The subjects covered are physics, including electricity and applications; chemistry and the chemical industries, including metallurgy, dyeing, distilling, sugar making, etc.; the mineral industries; mechanics and the mechanical industries, and agriculture.

SOCIETIES AND ACADEMIES.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE following titles of papers submitted for the Columbus meeting have been received by the secretaries of the respective sections. Additions will doubtless be made to the programs at the time of the meetings.

SECTION B—PHYSICS.

On a new spectrophotometer and spectro-scope; On achromatic polarization in combinations of crystalline media: D. B. Brace, University of Nebraska, Lincoln, Nebr.

An apparatus for the demonstration of the varying currents in the different conductors of a rotary converter: F. C. Caldwell, Ohio State University, Columbus, O.

On optical calibration of the slit of a spectrophotometer; Absorption spectra of solutions: E. V. Capps, University of Nebraska, Lincoln, Nebr.

An absolute determination of the E. M. F. of the Clark cell: Henry S. Carhart and Karl E. Guthe, University of Michigan, Ann Arbor, Mich.

The time of perception as a measure of the intensity of light; Relation between space and time in vision: J. McK. Cattell, Columbia University, N. Y.

On the fluting in Kundt's tubes with gases at different pressure; On the escape of gases from planets according to the kinetic theory: S. R. Cook, University of Nebraska, Lincoln, Nebr.

Note on hysteresis curves determined by a yoke with broken magnetic circuit; On the demagnetizing effect of currents in iron when electro-magnetically compensated: Z. E. Crook, University of Nebraska, Lincoln, Nebr.

A new graphical method of constructing the entropy-temperature diagram from the indicator card of a gas or oil engine: H. T. Eddy, University of Minnesota, Minneapolis, Minn.

Some types of March weather in the United States: Oliver L. Fassig, Johns Hopkins University, Baltimore, Md.

Magnetic measuring instruments and the laws of magnetism; some new electric apparatus; wave forms in the aluminum condenser

cell and in the magnetically blown arc; Method of locating point of discharge of smokeless powder by colored screens: Reginald A. Fessenden, Western University of Pennsylvania, Allegheny, Pa.

Polarization and polarization capacity: Karl E. Guthe and A. D. Atkins, University of Michigan, Ann Arbor, Mich.

Accidental double refraction in colloids and crystalloids: B. V. Hill, University of Nebraska, Lincoln, Nebr.

A method for the study of phosphorescent sulphides: Fred. E. Kester, Ohio State University, Columbus, O.

Simple science work for common schools: H. B. Mathews, Agricultural College of South Dakota, Brookings, S. D.

Pressure and wave-length: John Fred Mohler, Dickinson College, Carlisle, Pa.

On the effect of concentration series in the copper voltameter: B. E. Moore, University of Nebraska, Lincoln, Nebr.

On the coincidence of the two refracted rays in biaxial crystals: L. T. More, University of Nebraska, Lincoln, Nebr.

Thorium radiations: R. B. Owens, McGill University.

On differential dispersion in double refracting media: E. J. Rendtorff, University of Nebraska, Lincoln, Nebr.

A new voltage regulator: Geo. D. Shepardson, Granville, O.

The relation between magnetism and the elasticity of rods—and some S. H. M. curves: James S. Stevens, University of Maine, Orono, Me.

Note on the preparation of photographic reticles: David P. Todd, Observatory House, Amherst, Mass.

The equipment and facilities of the office of the U. S. standard weights and measures for the verification of electrical standards and measuring apparatus; An experimental test of the accuracy of Ohm's law: Frank A. Wolfe, Jr., U. S. Coast and Geodetic Survey, Washington, D. C.

SECTION F—ZOOLOGY.

Æstivation of *Epiphragmophora traskii* (Newcomb) in S. California: M. Burton Williamson, Los Angeles, Cal.

Natural taxonomy of the class *Aves*: R. W. Shufeldt, Takoma Park, D. C.

Notes on the morphology of the chick's brain: Susanna P. Gage, Ithaca, N. Y.

Further notes on the brook lamprey (*Lampetra wilderi*): Simon H. Gage, Cornell University, Ithaca, N. Y.

Respiration in tadpoles of the toad (*Bufo lentiginosus*): Simon H. Gage.

Photographing natural history specimens under water or other liquids with a vertical camera: Simon H. Gage.

Hybrid butterflies of the genus *Basilarchia*: William L. W. Field, Milton, Mass.

On some piratine bugs which may be responsible for so-called 'spider-bite' cases: L. O. Howard, Department of Agriculture, Washington, D. C.

Observations on the development of mammals: Charles S. Minot, Harvard University, Cambridge, Mass.

The correct systematic position of the *Spongidae* in Zoology: W. R. Head, Chicago, Ill.

Have we more than a single species of *Blissus* in North America? F. M. Webster, Wooster, Ohio.

On the utility of phosphorescence in deep-sea animals: C. C. Nutting, University of Iowa, Iowa City, Ia.

On the criteria for interpreting the psychology of animals: C. C. Nutting.

A discussion of *Aspidiotus cydoniae* and its allies: C. L. Marlatt, Washington, D. C.

Temperature control of scale insects: C. L. Marlatt.

SECTION I—SOCIAL AND ECONOMIC SCIENCE.

The psychological value of statistics: Carroll D. Wright, Washington, D. C.

[Title to be announced]: Edmund J. James, Chicago University.

Some new aspects of educational thought: Thomas M. Balliet, Springfield, Mass.

The basis of war and peace: M. A. Clancy, Washington, D. C.

Business cooperation: N. O. Nelson, St. Louis, Mo.

Thoughts on education from the standpoint of Porto Rico: John Eaton, Washington, D. C.

Some thermal determinations in the heat-

ing and ventilating of buildings: Gilbert B. Morrison, Kansas City, Mo.

Science and art in social development: John S. Clark, Boston, Mass.

Moral tendencies of existing social conditions: Washington Gladden, Columbus, O.

The manual element in education: C. M. Woodward, St. Louis, Mo.

[Title to be announced.]: W. B. Powell, Washington, D. C.

Natural distribution, as modified by modern agriculture: John Hyde, Washington, D. C.

Calculations of population in June, 1900: Henry Farquhar, Washington, D. C.

Civil Service in the United States: H. T. Newcomb, Washington, D. C.

Federal guaranties for maintaining republican government in the States: Cora A. Benneson, Cambridge, Mass.

DISCUSSION AND CORRESPONDENCE.

ON THE U. S. NAVAL OBSERVATORY.

THE article on the U. S. Naval Observatory by Professor Asaph Hall, Jr., in the number of SCIENCE for July 14th, treats very effectively of some matters which astronomers have long wished to see altered at that institution. Many able line officers—D. D. Porter and others—have served there, as Professor Hall suggests. Any amount of such service, however, can no more make astronomers than the service of half-pay officers could do in Sir George Airy's time, although at either Washington or Greenwich the habit of naval discipline was a help toward the formation of careful habits of observation. Nor do I suppose that the earlier Greenwich assistants, Baldrey and others, were better astronomers at the start than those at Washington, who brought with them a knowledge of astronomy.

In general we should find in the earlier volumes of the Washington observations precisely what we might expect if we knew the history of the establishment derived from the accessible data beginning with Gilliss's first report, which contains, among other things, the description of the instruments procured, some of them antiquated when they were constructed, others still used to some extent, others now replaced

by haphazard constructions for which some one more or less acquainted with the matter is responsible.

In general it may be said that the success or failure of the observatory now in use will be more definitely decided in two or three years after it is better known what the later reports shall indicate as to the constructive ability of the mechanicians who have been employed to replace or remodel the work of Troughton and Simms, Pistor and Martins, Alvan G. Clark and the other makers at first selected.

There is no doubt, I imagine, that the present astronomers at the observatory have had nearly *carte blanche* to do what they would, and we shall learn in a few years whether the immense amount of money expended on it has produced proportionate results, or is likely to appear to do so when they come forth to view. The excuses which were for several years offered for the delay in actually beginning the work on the zone— 14° to— 18° were not altogether satisfactory, as the astronomer whose observations of it are so quickly accomplished had been many years in service, and there is, so far as I am aware, nothing to show the necessity of the delay, except, if I may speak plainly, the entirely haphazard manner in which the U. S. Naval Observatory had been conducted from 1845 to the actual time of beginning observations on the zone.

It is not, in my judgment, necessary to do more to greatly improve the institution than to follow Airy's example in a simple matter of business according to the general custom at great observatories of the present day.

The appointment of a strong and intelligent visiting committee, to include a few prominent officers of the army and navy, together with a number of eminent and intelligent civilians, would add greatly, almost without expense or trouble, to the definiteness of the plans and the steadiness of the execution of the work of the institution, as one can readily see from the late autobiography of Sir George Airy.

TRUMAN HENRY SAFFORD.

WILLIAMS COLLEGE OBSERVATORY, July 19, 1899.

CEREBRAL LIGHT.

DR. E. W. SCRIPTURE, in SCIENCE of June 16th, gives an account of an experiment which